

WHAT IS CLAIMED IS:

1. An optical path changing polarizer comprising:  
a polarizer;

a adhesive layer disposed on one side of said polarizer,  
5 said adhesive layer having a refractive index different by 0.1  
or less from a refractive index of a surface layer of said one  
side of said polarizer; and

a repetitive prismatic structure provided on the other  
side of said polarizer, said repetitive prismatic structure  
10 including optical path changing slopes aligned in a  
substantially constant direction so as to be inclined at an  
inclination angle in a range of from 35 to 48 degrees with respect  
to a plane of said polarizer.

15 2. An optical path changing polarizer according to  
claim 1, wherein said optical path changing slopes consist of  
one kind of slopes aligned in a substantially constant direction,  
or include two or more kinds of slopes in which one kind of  
slopes aligned in a substantially constant direction serve as  
20 a reference while another kind of slopes aligned in another  
substantially constant direction are opposite to said one kind  
of slopes, and wherein said adhesive layer is covered with a  
strip sheet.

25 3. An optical path changing polarizer according to

claim 1, wherein an inclination angle of each of said optical path changing slopes with respect to said polarizer plane is in a range of from 38 to 45 degrees.

5           4.     An optical path changing polarizer according to claim 1, wherein said optical path changing slopes are formed into a structure of grooves each substantially shaped like an isosceles triangle or any other triangle in section.

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10           5.     An optical path changing polarizer according to claim 1, wherein said optical path changing slopes are formed into a structure of grooves or protrusions each substantially shaped like a tetragon or a pentagon in section.

15           6.     An optical path changing polarizer according to claim 1, wherein flat surfaces each of which is inclined at an inclination angle of not larger than 5 degrees with respect to said polarization plate plane has a projected area, on said polarizer plane, not smaller than 10 times as large as a projected  
20 area, on said polarizer plane, of slopes each of which is inclined at an inclination angle of not smaller than 35 degrees with respect to said polarizer plane.

25           7.     An optical path changing polarizer according to claim 1, wherein said prismatic structure is constituted by

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a combination of said optical path changing slopes and flat surfaces, wherein each of said optical path changing slopes is inclined at an inclination angle in a range of from 38 to 45 degrees with respect to said polarizer plane, wherein each of said flat surfaces is inclined at an inclination angle of not larger than 5 degrees with respect to said polarizer plane and has a width of not smaller than 10 times as large as the width of each of said optical path changing slopes, and wherein said structure is formed by grooves each of which is substantially shaped like a triangle in section and which are continued from one end to the other end of said polarizer.

8. An optical path changing polarizer according to claim 1, wherein said prismatic structure is constituted by discontinuous grooves each substantially shaped like a polygon such as a triangle, a tetragon or a pentagon in section, wherein the length of each of said discontinuous grooves is not smaller than 5 times as large as the depth of each of said discontinuous grooves, wherein said optical path changing slopes are formed in a direction of the length of said grooves and inclined at an inclination angle in a range of from 38 to 45 degrees with respect to said polarizer plane, and wherein a projected area, on said polarizer plane, of said discontinuous grooves is not larger than 10 % of said polarizer plane.

9. An optical path changing polarizer according to claim 1, wherein said prismatic structure is formed so as to be added to or integrated with a transparent protective layer of said polarizer.

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10. An optical path changing polarizer according to claim 1, further comprising a reflection layer disposed closely on a surface on which said prismatic structure is formed.

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11. An optical path changing polarizer according to claim 1, wherein said optical path changing slopes have ridgelines parallel to or inclined within an angle range of  $\pm 30$  degrees with respect to one side of said polarizer.

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12. An optical path changing polarizer according to claim 1, wherein said adhesive layer is of a light diffusion type.

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13. An optical path changing polarizer comprising:  
a polarizer including a polarizing element and a transparent protective layer disposed on at least one side of said polarizing element;

an adhesive layer disposed on one side surface of said polarizer; and

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a repetitive prismatic structure disposed on the other

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side of said polarizer, said repetitive prismatic structure including optical path changing slopes aligned in a substantially constant direction so as to be inclined at an inclination angle of from 35 to 48 degrees with respect to a plane of said polarizer;

wherein each of respective refractive indexes of said adhesive layer and a material for forming said optical path changing slopes is not lower than a refractive index of said polarizing element or said transparent protective layer.

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14. An optical path changing polarizer according to claim 13, wherein said optical path changing slopes consist of one kind of slopes aligned in a substantially constant direction, or include two or more kinds of slopes in which one

15 kind of slopes aligned in a substantially constant direction serve as a reference while another kind of slopes aligned in another substantially constant direction are opposite to said one kind of slopes.

20 15. An optical path changing polarizer according to claim 13, wherein said repetitive prismatic structure having said optical path changing slopes is formed on an outer surface of a film, the other surface of said film being bonded to said other side of said polarizer through a second adhesive layer;

25 and wherein a refractive index of said second adhesive layer

is not lower than the refractive index of said polarizing element or transparent protective layer.

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16. An optical path changing polarizer according to  
5 claim 13, wherein at least said adhesive layer disposed on said  
one side of said polarizer is a tacky layer.

17. An optical path changing polarizer according to  
claim 16, wherein an exposed surface of said tacky layer on  
10 said one side surface of said polarizer is covered with a strip  
sheet.

18. An optical path changing polarizer according to  
claim 13, wherein each of said optical path changing slopes  
15 is inclined at an inclination angle in a range of from 38 to  
45 degrees with respect to a plane of said polarizer.

19. An optical path changing polarizer according to  
claim 13, wherein each of said optical path changing slopes  
20 is based on a groove structure substantially shaped like an  
isosceles triangle or any other triangle in section.

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20. An optical path changing polarizer according to  
claim 13, wherein each of said optical path changing slopes  
25 is based on a groove or protrusion structure substantially shaped

like a tetragon or a pentagon in section.

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21. An optical path changing polarizer according to claim 13, wherein a projected area, on said polarizer plane, of any flat surface having an inclination angle of not larger than 5 degrees with respect to said polarizer plane is not smaller than 10 times as large as a projected area, on said polarizer plane, of any slope having an inclination angle of not smaller than 35 degrees.

22. An optical path changing polarizer according to claim 13, wherein said structure of irregularities has optical path changing slopes each inclined at an inclination angle in a range of from 38 to 45 degrees with respect to said polarizer plane, and flat surfaces each inclined at an inclination angle of not larger than 5 degrees with respect to said polarizer plane and each having a width not smaller than 10 times as large as a width of each of said optical path changing slopes, and wherein said structure is formed by continuous grooves each of which is substantially shaped like a triangle in section and each of which is extended from one end to the other end of said polarizer.

23. An optical path changing polarizer according to claim 13, wherein: said structure of irregularities having

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optical path changing slopes is formed by discontinuous grooves  
each substantially shaped like a polygon such as a triangle,  
a tetragon or a pentagon in section; a length of each of said  
discontinuous grooves is not smaller than 5 times as large as  
5 a depth of said groove; said optical path changing slopes are  
formed in a direction of the length of said grooves and inclined  
at an inclination angle in a range of from 38 to 45 degrees  
with respect to said polarizer plane; and a ratio of an area  
of said discontinuous grooves to an area of said one side surface  
10 of said polarizer is not higher than 10 %.

24. An optical path changing polarizer according to  
claim 13, wherein said discontinuous grooves having optical  
path changing slopes are arranged at random.

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25. An optical path changing polarizer according to  
claim 13, wherein said repetitive prismatic structure having  
optical path changing slopes is formed so as to be integrated  
with said transparent protective layer of said polarizer.

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26. An optical path changing polarizer according to  
claim 13, wherein a light reflection layer is disposed closely  
on a surface on which said structure of irregularities having  
optical path changing slopes is formed.

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27. An optical path changing polarizer according to claim 13, wherein ridgelines of said optical path changing slopes are parallel to or inclined within an angle range of  $\pm 30$  degrees with respect to one side of said polarizer.

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28. An optical path changing polarizer according to claim 13, wherein said adhesive layer is of a light diffusion type.

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29. An optical path changing polarizer according to claim 28, wherein said light diffusion type adhesive layer is provided on a surface of said polarizer.